

Increase health benefits of exercise by working out before breakfast

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According to a new study, published in the *Journal of Clinical Endocrinology and Metabolism*, health scientists at the Universities of Bath and Birmingham found that by changing the timing of when you eat

and exercise, people can better control their blood sugar levels.

The six-week study, which involved thirty men classified as obese or overweight and compared results from two intervention groups (who ate breakfast before / after exercise) and a control group (who made no lifestyle changes), found that people who performed exercise before breakfast burned double the amount of fat than the group who exercised after breakfast.

They found that increased fat use is mainly due to lower insulin levels during exercise when people have fasted overnight, which means that they can use more of the fat from their fat tissue and the fat within their muscles as a fuel. To test proof-of-principle the initial study involved only men, but future studies will look to translate these findings for different groups including women.

Whilst this did not lead to any differences for weight loss over six weeks, it did have 'profound and positive' effects on their health because their bodies were better able to respond to insulin, keeping blood sugar levels under control and potentially lowering the risk of diabetes and heart disease.

Building on emerging evidence that the timing of meals in relation to exercise can shift how effective exercise is, the team behind this study wanted to focus on the impact on the fat stores in muscles for individuals who either worked out before or after eating and the effect this had on insulin response to feeding.

Dr. Javier Gonzalez of the Department for Health at the University of Bath explained: "Our results suggest that changing the timing of when you eat in relation to when you exercise can bring about profound and positive changes to your overall health.

"We found that the men in the study who exercised before breakfast burned double the amount of fat than the group who exercised after. Importantly, whilst this didn't have any effect on weight loss, it did dramatically improve their overall health.

"The group who exercised before breakfast increased their ability to respond to insulin, which is all the more remarkable given that both exercise groups lost a similar amount of weight and both gained a similar amount of fitness. The only difference was the timing of the food intake."

Over the six-week trial, the scientists found that the muscles from the group who exercised before breakfast were more responsive to insulin compared to the group who exercised after breakfast, in spite of identical training sessions and matched food intake. The muscles from those who exercised before breakfast also showed greater increases in key proteins, specifically those involved in transporting glucose from the bloodstream to the muscles.

For the insulin response to feeding after the 6-week study, remarkably, the group who exercised after [breakfast](#) were in fact no better than the control group.

Co-author Dr. Gareth Wallis of the University of Birmingham added: "This work suggests that performing exercise in the overnight-fasted state can increase the health benefits of exercise for individuals, without changing the intensity, duration or perception of their effort. We now need to explore the longer-term effects of this type of [exercise](#) and whether women benefit in the same way as men."

More information: *Journal of Clinical Endocrinology and Metabolism* (2019). [DOI: 10.1210/clinem/dgz104](https://doi.org/10.1210/clinem/dgz104)

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